EPA

Notes From Underground

An update on source water protection and underground pollution control from the U.S. Environmental Protection Agency (EPA) Pacific Southwest/Region 9, serving Arizona, California, Hawaii, Nevada, Native American Tribes in the Region, and the Pacific Islands.

Winter 2004
EPA 909-N-03-003

IN THIS ISSUE:

Deadline Approaching For Closing Hawaii's Large Capacity Cesspools

The State of Hawaii Department of Health (DOH) has estimated that there are approximately 185,000 cesspools in Hawaii. Of these, at least 600 are known to be large capacity cesspools which, by definition, "have the capacity to serve 20 or more persons per day." The DOH and U.S. Environmental Protection Agency (EPA) have agreed that this equates to a daily flow capacity of 1,000 gallons or more. Such cesspools are subject to a UIC national ban, and must be closed by April 2005.

The large number of cesspools is unique to Hawaii. Large capacity cesspools are known to serve schools, hotels, restaurants, shopping malls, industrial facilities, parks, multiple homes ("gang cesspools") and hospitals. The UIC ban does not apply to smaller cesspools receiving only sanitary waste. However, any cesspool found to be contaminating water should be closed to prevent pollution and disease.

Cesspools are usually lined or unlined holes in the ground that receive raw sewage and do not provide any treatment of the raw sewage. Therefore, cesspools can allow pathogens, ammonia, and nitrate to percolate directly into ground water which is a source of drinking water in Hawaii. Pathogens which can be present in sewage include cholera, dysentery, typhoid and hepatitis. Nitrate, at a high enough concentration, can cause methemoglobinemia or "blue baby syndrome" which prevents the blood of infants from absorbing oxygen and can result in death. Depending on the proximity of a cesspool to a nearby stream, river or the ocean, pathogens and nutrients can travel from the cesspool through the ground water to these surface water bodies. Nutrients from shoreline cesspools may contribute to nearshore algal blooms.

While other states have required septic systems where sewer lines were out of reach, Hawaii has very limited soil cover, with heavy clays and volcanic rock at or near the surface in many areas. Conventional horizonal dispersal via leachfields is not always used as it is in much of the continental United States. Cesspools have been used because they are easy to build, cheap to maintain, and require little land. Vertical disposal, however, can accelerate pollution, without sun and oxygen to aid treatment.

In 1991, DOH promulgated regulations that banned new cesspools in the center of the islands where most drinking water wells are located. However, many large capacity cesspools were "grandfathered" in, and must now be closed. To comply with the federal ban, an owner of a large capacity cesspool will either have to connect to a sewer and close the cesspool, or install additional treatment such as a large capacity septic system or wastewater package plant. Facility owners must contact DOH to determine the requirements applicable to their site, which may include instructions for proper closure of cesspools and pre-construction approval for new onsite wastewater treatment systems.

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What is ETV?

ETV is the Environmental Technology Verification Program, a joint venture between EPA and the National Sanitation Foundation (NSF) to verify technologies for improving public health and environmental quality. Equipment reviewed includes many onsite sewage treatment components, which could be utilized in response to the cesspool ban.

To see what ETV technologies benefit drinking water and ground water, visit www.epa.gov/etv/centers/center4.html.

EPA's FY2003 budget included a $495,000 special appropriation for the replacement of cesspools in Hawaii. This grant was directed to DOH (and subsequently to the County of Hawaii) to assist disadvantaged communities in complying with the federal ban, by replacing existing gang cesspools with community septic systems or other community wastewater systems. Margarita Hopkins, in the Department of Research and Development for the County, is the project manager for the grant. The County will provide $390,273 as a match, providing close to $900,000 to help the communities on the Big Island.

Other Funding Sources for Upgrading Treatment

For Property Owners: the U.S. Department of Agriculture (USDA) offers Section 504 low interest loans and grants to individuals for home repair which includes cesspool replacement. If an applicant is low-income, interest rates can be as low as one percent. If the applicant is over 62 years of age, they can receive a grant.

For communities: the DOH Clean Water State Revolving Fund (CWSRF) can be used to provide low interest loans to counties and municipalities. For more information contact: DOH at 808-586-4294.

The USDA also offers Water and Waste Disposal loans and grants to develop community wastewater systems in rural areas or to cities and towns with a population of 10,000 or less. Funds are available to entities such as municipalities, counties and special-purpose districts. The money can be loaned directly from USDA or through a bank. Grants can also be given, in some instances, for up to 75 percent of eligible project costs. See also www.usda.gov/rus/water/prog.htm.

There are also U.S. Housing and Urban Development (HUD) Community Development Block Grant and HOME programs that provide funds to counties. Under the HOME program, counties can use this funding for cesspool conversion, provided that it is done in conjunction with HOME funded rehabilitation of existing housing units. See also www.hud.gov.

To get more information about the EPA large capacity cesspool ban, contact Shannon FitzGerald at 866-EPA-WEST. For more information about, closure requirements or State UIC permits, contact Chauncey Hew, DOH, at 808-586-4258. For information regarding wastewater treatment installation and approval, contact Harold Yee, DOH, at 808-586-4294.

Update on State Source Water Assessment Programs

Three of the four Pacific Southwest states: AZ, CA and NV have almost completed their Source Water Assessment Program (SWAP). Hawaii is working toward completing its program and is scheduled to finish by the end of the calendar year. To obtain information about the results of the assessments or to learn more about how your State is transitioning from the assessments to source water protection (SWP), please contact:

AZ: Nina Miller, SWP Manager
Arizona Department of Environmental Quality
(602) 771-4641, Miller.Nina@ev.state.az.us
http://www.adeq.state.az.us/environ/water/dw/mau.html

CA: Leah Walker
California Department of Health Services
(707) 576-2295, LWalker2@dhs.ca.gov
www.dhs.ca.gov/ps/ddwem/dwsap/overview.htm

HI: Bill Wong, Drinking Water Chief
Hawaii Department of Health
(808) 586-4258, bwong@eha.health.state.hi.us

Dan Chang, SWAP/SWP Coordinator
Hawaii Department of Health
(808) 586-4258, dchang@eha.health.state.hi.us
www.hawaii.gov/health/eh/sdwb

NV: Jim Balderson, SWAP Manager
Nevada State Health Division
Bureau of Health Protection Services
(775) 687-4754, jbalderson@nvhd.state.nv.us
health2k.state.nv.us/bhps/phe/swa.htm

Nevan Kane, Wellhead Protection (WHP) Coordinator
Nevada Division of Environmental Protection
Bureau of Water Pollution Control
(775) 687-9426, nkane@ndep.state.nv.us
ndep.nv.gov/bwpc/wellhead.htm

DRINKING WATER SECURITY: EPA is making available the interim final ***Response Protocol Toolbox: Planning for and Responding to Contamination Threats to Drinking Water Systems***. The Toolbox is designed to help the water sector effectively and appropriately respond to intentional contamination threats and incidents. It was produced by EPA, building on the experience and expertise of several drinking water utilities, in particular, the Metropolitan Water District of Southern California. See http://www.epa.gov/safewater/security/index.html#emergency for more information.

Tribal Issues

Hualapai Nation's Source Water Assessment and Protection Activities

The Hualapai Nation has made great strides in securing their current and future drinking water supplies by completing a Source Water Assessment (Assessment) and beginning a comprehensive Source Water Protection Program.

During the Assessment of a major public water system, the land area surface that conveys surface water to the ground water aquifer (protection area) was determined using extensive computer modeling based on field data. Activities that could possibly endanger the ground water supply in the protection area were inspected and evaluated. As a final assessment step, the nearby residents were notified of the contamination risk associated with various activities in the protection area.

Fortunately, no high-risk activities were found in the protection area. The Tribe is currently developing a Source Water Protection Program that includes drafting ground water protection ordinances, developing and presenting ground water conservation and protection strategies in schools and at public meetings, and performing monthly inspections of facilities located within the protection area to ensure their drinking water resources do not become contaminated.

The Hualapai Nation is doing an exemplary job in developing a Source Water Protection Program from the results of a thorough Source Water Assessment.

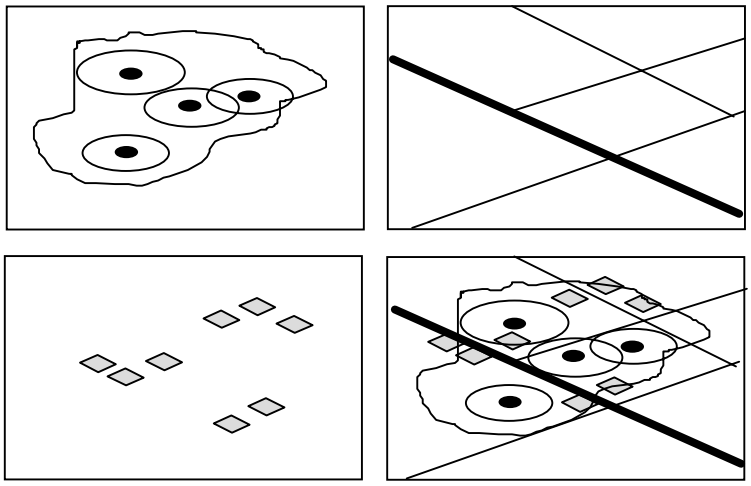
Tribal Source Water Assessment Program (SWAP) Training

EPA will hold a third Source Water Assessment Program (SWAP) training in Phoenix, AZ in September 2004 (exact dates to be announced). The purpose of this training is to enable participants to complete all aspects of a source water assessment. An assessment includes 4 steps: 1- delineate a drinking water source area, 2- inventory potential contaminating activities within this delineated area, 3- conduct a susceptibility analysis to determine how susceptible the drinking water source is to the identified potential contaminating activities, and 4- disseminate the results of the assessment to the community. This hands-on, highly interactive 3-day course will enable the participants to complete all aspects of a source water assessment by covering the following topics:

- Hydrogeologic Principles
- Ground Water Mapping Development and Interpretation
- Aquifer Testing Procedures
- Source Water Delineation Methods
- How to Evaluate and Prioritize Sources of Drinking Water Contamination

Tribes who currently have a SWAP grant or those who anticipate applying for one in response to the announcement of SWAP/SWP grant funds for Federal Fiscal Year 2004 are strongly encouraged to attend the upcoming training in Phoenix, AZ. This training is aimed at federally recognized tribes that operate their own public water supply system.

For more information, contact Eric Byous at 415-972-3531 or email byous.eric@epa.gov.



Wellhead area delineation + area map + locations of potential contaminant sources = ***tool for source water protection***

EPA's National Source Water Protection Conference, June 2003

Over 450 people attended the 2003 National SWP Conference in Washington, D.C. Participants came from 47 states, the District of Columbia, and Canada. They represented all levels of government from local to federal, utilities, technical assistance providers and health care workers, and private citizens. Twelve conference sessions included effective communication strategies, GIS tools, working with upstream neighbors, and integrating CWA and SDWA programs. The conference also featured plenary sessions on partnerships, financing and public health protection.

These publications were made available at the conference: "Source water Protection: It's In Our Hands" brochure and poster (EPA 816-F-03-008); "Funding for Source Water Protection Activities" (EPA 816-K-03-004); and "EPA's Annotated Bibliography of Source Water Protection Materials on CD" (EPA 816-F-03-010). These documents and proceedings are posted on www.epa.gov/safewater/protect/swpconf.html. Or, hard copies may be obtained free of charge by calling the Safe Drinking Water Hotline at 800-426-4791, or email hotline-sdwa@epa.gov.

Upcoming Events

March 21-24, 2004: 10th National Symposium on Individual and Small Community Sewage Systems joint conference with the 8th International Drainage Symposium; Sacramento, California. Register at http://www.asae.org/meetings/index.html.

March 22-24: Rural Community Assistance Corporation annual conference in Portland, Oregon. See www.rcac.org for more information.

March 30-April 2: Annual Educational Symposium, Calfiornia Environmental Health Association, Pasadena. See www.ceha.org.

April 19 - 22, 2004: National Tribal Environmental Council 2004 Conference in South Carolina hosted by the Catawba Tribe of South Carolina; for details see www.ntec.org.

September 2004: EPA Region 9 Tribal Source Water Assessment Program (SWAP) Training in Phoenix, AZ. For more information, contact Eric Byous at byous.eric@epa.gov.

New California website for Ground Water:
http://www.groundwater.water.ca.gov/

Notes From Underground

U.S. EPA, Pacific Southwest/Region 9
Ground Water Office, WTR-9
75 Hawthorne Street
San Francisco, CA 94105

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www.epa.gov/ada/csmos.html.

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